

REMARKS

Applicants wish to thank the Examiner for the courteous and helpful discussion held with Applicants' representative on January 23, 2003. During the discussion, it was noted that none of the applied references describe removing the solvent immediately prior to a dispersion treatment.

The rejections of the claims under 35 U.S.C. §§ 102(b) and 102(e) over Uraki, Shimomura, Tsutsumi, JP08218013, and Song are respectfully traversed. None of the applied references describe the claimed process, in which the solvent is removed immediately prior to a dispersion treatment.

The claimed invention is a process for preparing an aqueous dispersion of pigment-containing particles, in which an organic solvent solution of a polymer and water, and is first subjected to a solvent removal process (e.g., distillation), then subjected to a dispersion treatment step (e.g., high-pressure homogenization). The size of the polymer particles of the resulting dispersion are determined by the dispersion treatment conditions (present specification at page 10, line 7 to page 11, line 4). Applicants have found that removing the solvent before dispersing the polymer is advantageous for a number of reasons, including, for example, increasing safety because workers are not exposed to solvent vapors during the dispersion process, and eliminating the need for expensive explosion-proof dispersion devices (specification at page 3, lines 1-15).

Uraki describes a quite different process for preparing an aqueous dispersion of a polymer and a pigment, in which the polymer particles are formed and dispersed *prior* to removal of the organic solvent. For example, Example 4 of Uraki, cited by the Examiner, describes first "kneading" a mixture of copper phthalocyanine pigment with an acrylic "oligomer" and diethylene glycol (col. 10, lines 50-62). Uraki clearly

describes carrying out “kneading” (i.e., pulverizing the organic pigment into primary particles) before dispersing the kneaded mixture in water, and *subsequently* removing the “water-soluble solvent” (col. 5, lines 44-54). Thus Uraki describes a different process in which the solvent is removed *after* forming and dispersing the polymer particles, whereas in the claimed process, the solvent is removed *before* the dispersion step (i.e., in which the polymer particles are formed). Furthermore, as discussed above, the claimed process offers significant advantages over that of Uraki. Accordingly, Uraki neither anticipates nor suggests the claimed invention.

Song, like Uraki, also describes a process in which a solvent is removed *after* the polymer component is dispersed (i.e., formed into small particles suspended in the aqueous medium). For example, Song describes dispersing an epoxy electrodeposition resin in deionized water, acid, and a cationic surfactant, then extracting the low boiling point organic solvent from the “water-dispersed solution” (col. 5, lines 36-41). Thus, the solvent extraction expressly occurs *after* dispersing the resin. Likewise, the cationic electrodeposition resin of Example 1-(b) is first “water-disperse[d]”, then solvent stripped to provide a “water-dispersed solution” of the resin (col. 9, lines 16-24). During the interview, the Examiner argued that this “water-dispersed solution” of the resin is subsequently dispersed in Example 1-(d), and therefore Song describes the claimed process. However, a careful reading of Example 1-(d) indicates that the “dispersed product” described therein is a dispersion of inorganic pigments (i.e., carbon black, titanium dioxide, lead silicate, aluminum silicate) in a “pigment grinding vehicle”, which is then “homogenously *stirred*” (emphasis added) with the dispersed electrodeposition resin dispersion. Thus, the electrodeposition resin is *not*, as asserted by the Examiner, again dispersed in Example 1-(d). Furthermore, since Song distinguishes the terms “dispersed” and

“stirred”, one cannot reasonably assert that “stirred” is equivalent to “dispersed”..

Thus, homogenously stirring together the inorganic pigment dispersion and the resin dispersion cannot reasonably be considered to be “dispersing” the electrodeposition resin (i.e., Example 1-(d)) after “solvent stripping” the electrodeposition resin dispersion in Example 1-(b). Accordingly, Song also fails to anticipate the claimed invention. Moreover, as discussed above, the claimed process, in which the solvent is removed prior to dispersing the resin, provides distinct advantages over the process of Song, in which the solvent is removed after the dispersion step. Accordingly, Song also fails to suggest the claimed invention.

Likewise, the remaining applied references also describe processes in which the solvent is removed *after* dispersing the resin, and also neither anticipate nor suggest the claimed invention. For example, Shimomura describes first dispersing a polyester resin, then subsequently removing the solvent by “azeotropic distillation” (col. 7, lines 56-67); Tsutsumi describes emulsifying a mixture of a polymer, solvent, and water, then subsequently heating the emulsion under reduced pressure to “evaporate the organic solvent” (col. 12, line 61 to col. 13, line 4); and JP08218013 describes first dispersing the synthetic resin, then subsequently “removing the hydrophobic organic solvent” (machine translation at paragraph [0005]).

Furthermore, as discussed above, the claimed process, in which the solvent is removed prior to dispersing the resin, provides distinct advantages over the processes described in Shimomura, Tsutsumi, and JP08218013, in which the solvent is removed *after* the polymer is dispersed. Accordingly, neither Shimomura, Tsutsumi, nor JP08218013 anticipate or suggest the claimed invention.

Accordingly, and for the reasons stated above, Applicants respectfully request that the rejections be withdrawn. Applicants submit that the present application is now in condition for allowance, and early notification thereof is earnestly solicited.

Respectfully Submitted,

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